

TREATISE (A) ON SALOL xx

A TREATISE ON

SALOL,

THE NEW REMEDY

— FOR —

RHEUMATISM AND RHEUMATIC
AFFECTIONS.

POSSESSING ALL THE ADVANTAGES OF SALICYLIC ACID AND
SALICYLATE OF SODA, WHILE NOT CAUSING ANY
OF THEIR OBJECTIONABLE EFFECTS.

MANUFACTURED BY DR. F. VON HEYDEN'S SUCCESSORS AT
RADEBEUL-DRESDEN

Sole Agents for the United States of America and Canada for this factory,
W. H. SCHIEFFELIN & CO., NEW YORK.



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INTRODUCTION.

"Salol," or "Salicylate of Phenol," was first produced by Professor von Nencki, of Berne, and brought to the attention of the medical profession in a communication by Dr. Sahli to the Medico-Pharmaceutical District Society of Berne, at its meeting held in that city on April 6th, 1886.

Salol is composed of 40% of Phenol (Carbolic Acid) and 60% of Salicylic Acid; a very faint odor of Carbolic Acid is characteristic of pure Salol.

The original patentees of Salol for Germany and the United States of America are Dr. F. von Heyden's successors at Radebeul-Dresden.

We were the first to introduce this new and valuable remedy several months since to the medical profession of the United States, to whom we offered it in the form of our Soluble Pills of the strengths of 2½ and 5 grs.

Our Pills of Salol have been submitted to the most eminent practitioners of New York and Brooklyn, those having the most extended practice and connected with our large hospitals, for the purpose of determining their properties by practical tests, and from all, without exception, who have had an opportunity of making a trial, we have the assurance that its action has been successful and speedy, and free from the objectionable effects of the Salicylic Salts. And their testimony has been confirmed by many physicians throughout the country.

From an article on the subject by John Moss, F.I.C., F.C.S., in the "Pharmaceutical Journal and Transactions," British, October 2d, 1886, we quote the following—viz.:

"The advantages which are claimed for Salol over Salicylate of Soda, for which it is prepared as a substitute, are dependent first of all on its insolubility in water and the juices of the stomach, and secondly on the ease and completeness with which it is decomposed after passing the pylorus. Being insoluble in water, it is free from the repellent and nauseating effects of Salicylate of Soda, which some patients find so objectionable that even syncope has sometimes supervened on ingestion. Passing through the stomach unaltered, it undergoes decomposition in the duodenum, where it comes into contact with the pancreatic juice and is broken up into Salicylic Acid and Phenol.

"Sahli has used 'Salol' with good effects in all rheumatic affections, in chronic urticaria, in sub-orbital neuralgia, as an antipyretic, in diabetes, in intestinal catarrh, in typhoid-fever, in cholera, against intestinal parasites, in catarrh of the bladder, in ozæna, in otorrhœa, as a local application in gonorrhœa, and as a mouth-wash."

From an article by C. C. P. Silva, M.D., in "Western Medical Reporter," August, 1886, we quote as follows—viz.:

"It is insoluble in the gastric juices, and consequently better borne by weak or irritable stomachs; its solubility is obtained by the action of the pancreatic secretion, and hence its more pronounced local effects upon the intestinal tract, chiefly upon the duodenum. The buzzing and ringing of the ears, produced by Salicylic Acid and Salicylate of Soda, are hardly noticeable with the use of Salol.

"In articular rheumatism it allays both fever and pains better than the respective amount of Salicylic Acid that it contains. In neuralgia it succeeds fully as well as Salicylic Acid."

From an article in the "Kansas City Medical Record," of September, 1886, copied from the "New York Medical Record," we quote—viz.:

"It possesses the great advantage over Salicylic Acid in being tasteless, and in not causing nausea or other unpleasant effects."

From an article in the "Wiener Medicinische Presse," republished in the "St. Louis Medical Review," July 3d, 1886, we quote—viz.:

" Sahli has himself taken the drug in doses of 90 to 120 grains without producing ringing in the ears, and in other individuals experimented upon this symptom was always less marked than in the case of an equivalent amount of Salicylic Salts."

A careful perusal of the articles from which above extracts are taken will afford much information concerning Salol, which space will not permit us to print, and for further literature on the subject we may mention :

" La Semaine Medicale," April 14th, 1886.

" Buffalo Medical and Surgical Journal," October, 1886, fol. 133, copied from " Bull. Gen. de Therapeutic," August 15th, 1886.

" Pharm. Centrahalle," XXVII., fol. 219.

" Philadelphia Medical and Surgical Reporter," October 23d, 1886, fol. 536, and April 9th, 1887, fol. 467.

" Pharmaceutical Journal and Transactions," January 1st, 1887.

" British Medical Press and Circular," February 9th, 1887, fol. 117 and 126.

The most valuable notes that have yet appeared concerning Salol are those of F. E. Georgi, M. D., Physician to the City Hospital, Goerlitz (Silesia), which were published in the " Berliner Klinische Wochenschrift," which notes are translated by us and appended here for the benefit of the profession. We call special attention to the fact that the Salol used by Dr. Georgi was furnished from the factory of Dr. F. von Heyden's successors at Radebeul-Dresden, and that we are sole agents for Salol from this factory, and no other salt is used in our Soluble Pills.

W. H. SCHIEFFELIN & CO.,

New York.

JUNE, 1887.

NOTES ON SALOL.

BY

F. ED. GEORGI, M.D.,

PHYSICIAN TO THE CITY HOSPITAL AT GOERLITZ (SILESIA).

(Translated from the "Berliner Klinische Wochenschrift," 1887, Nos. 9, 10, and 11.)

By W. H. SCHIEFFELIN & CO., New York.

INTRODUCTORY.

The number of remedies belonging to the same class as Salicyl and Phenol, which are at the disposal of the physician, has been again increased by a new preparation, the excellent qualities of which have already been published in a few instances. Under the guidance of *Sanitätsrath*, Dr. KLEEFELD, our chief of staff, I have had occasion during the last few months to study the therapeutic value of Salol in a considerable number of cases of a different character. I shall describe in this paper some of our observations, which, to a great extent, confirm facts previously established.

DISEASES IN WHICH SALOL HAS BEEN USED.

Salol was administered in various ways to forty patients suffering from various complaints.

These cases were :

Articular and Muscular Rheumatism.....	20
Angina.	4
Stomatitis.....	3
Erysipelas of the Face (Bullosum).....	21
Peritonitis (very acute).....	1
Diphtheritis.....	1
Catarrh of the Stomach and Duodenum with Chronic Jaundice.....	1
Tuberculosis of the Lungs.....	4
Cystitis.....	3
Ozaena	1
Typhoid-fever.....	2
Sciatica.....	1
Septic-fever after Abortion.....	1

PROPERTIES OF SALOL, PHYSICAL, CHEMICAL, AND MEDICINAL.

Salol, or Salicylate of Phenol, is a white crystalline powder almost insoluble in water, nearly tasteless, and has a faint aromatic odor. It is soluble in Ether, Petroleum-Ether, Alcohol, Ligroine, Fatty Oils, etc. At about 43° C. (110° F.) it melts, and has then the appearance of a colorless, oily substance, which soon congeals completely. Its composition is such that it may be said to consist of 40% of Phenol (or Carbolic Acid) and 60% of Salicylic Acid. In the gastric juice Salol is nearly insoluble, but it is decomposed into its two constituents after having passed into the intestine; it is eliminated from the body as Sulpho-Carbolic Acid and Uro-Salicylic Acid.

Although Salol contains Phenol and Salicylic Acid, the disagreeable action of either, even when taken in considerable quantities, will never be observed in large doses.

Salol has a specific, faintly salty taste, which is hardly perceptible, probably because it is insoluble in saliva, neither the sweetish, nauseating taste of the Salicylic Acid nor its

Soda-salt, nor the strong, burning taste of the Carbolic Acid being present. This constitutes a great advantage, which the administration of Salol has over that of its two constituents, in private practice especially. Only one individual among those observed by us declared that its taste did not agree with him. I may add that we have always given Salol pure and simple, without addition of sugar; a little water was partaken of after it had been swallowed. No taste remains, only the teeth feel blunt after it, but it does not at all injure them. The best form of administration is that of Pills.

SALOL IN RHEUMATISM AND ITS ALLIED DISEASES.

The greatest field for the use of Salol will be Rheumatism and allied diseases—*i.e.*, those on a rheumatic basis. Before we deal with the latter, however, we will consider its administration in other diseases.

SALOL EXTERNALLY IN ERYSIPELAS.

Externally we have applied Salol mixed with an equal part of Talcum to the abraded surfaces remaining from the broken blisters in two cases of *Erysipelas faciei*. Whether it serves a better purpose than other disinfectants in the form of a dry powder, I do not feel called upon to decide on the strength of only two observations. As it may become partially dissolved in the secretions of the open sores, it must act similar to the applications of Carbolic Acid usually made. There was no disagreeable reaction on the part of the skin.

In the mouth Salol may be used in different ways.

SALOL IN ANGINA LACUNARIS AND ANGINA CATARRHALIS.

Several cases of *Angina lacunaris* and *Angina catarrhalis* got well by using it as a gargle, about as quickly as we are wont to see during the use of other antiseptic gargles—*e.g.*, Chlorate of Potassa. For this purpose a solution of Salol in Alcohol (4 to 5 : 100) was first prepared; it may be made stronger, for saturation occurs at 1 : 10. Of this about 8 (3 ii.) to 10 cubic centimetres (3 iiss.) are added to 200 grammes ($\frac{3}{4}$ vi.) of water, and this is used for gargling. In one case the hypertrophy was persistent; but this remained equally so after we used a gargle of nitrate of silver (0.2 : 200.0; gr. iii. : $\frac{3}{4}$ vi.). The obstructions filling the lacunæ disappear about as quickly with the use of Salol as with that of other disinfectant gargles. A female patient who was admitted late one afternoon showed numerous plugs which were so tightly imbedded that they could not be pressed out with a spatula; in the morning these were gone, although the difficulty in swallowing still remained for some time.

SALOL AS A DEODORIZER OF THE BREATH IN ABDOMINAL TYPHOID AND STOMATITIS.

A really very quick effect is to be observed, if deodorization of the mouth is attempted by the use of a solution of Salol. The most offensive and penetrating odor disappears entirely after thoroughly gargling once or twice within half an hour. This was observed in a case of Abdominal Typhoid, where the patient had a thickly-coated tongue, with thickening and partial destruction of the mucous membrane of the mouth. Other observations were made in cases of Stomatitis, due to uncleanness or carious teeth. It is probable that the prompt action of this disinfectant mouth-wash is due to the fact that the solution of Salol adheres very closely to the parts. It may even be that after the evaporation of the Alcohol Salol-crystals form in all the nooks and crevices, on account of its insolubility in water; these crystals cling to the parts much longer than aqueous solutions of other disinfectants. A phthisical patient who had copious expectorations, which were injurious to the structures of the mouth, and gave rise to a nauseating odor, used the Salol-solution with gratifying results; the bad odor disappeared, and the appetite, as well as the appearance of the tongue, improved greatly.

SALOL IN DIPHTHERITIC AFFECTIONS.

A case of moderate but true diphtheritic affection of the tonsils and uvula, accompanied by fever, ranging between 39° and 40° C. (102.2° and 104° F.), got well by using Salol internally as well as in the form of a mouth-wash, after ten days; the latter half of these really belonging to the period of convalescence. Probably here also the prolonged action of the Salol-molecules against the evanescent action of other disinfectants is important, since by it Salol retards the propagation of micro-organisms. It might also be tried in these cases by applying the drug directly in the form of powder.

SALOL IN MERCURIAL STOMATITIS.

A severe mercurial Stomatitis was cured by the use of the Salol-mouth-wash in seven days—*i.e.*, as quick as it would be by the use of other gargles. There is one drawback con-

nected with the use of this mouth-wash which must be mentioned ; it is this, that it must be used up quickly ; for after standing a short time Salol is precipitated in small particles from this aqueous mixture, which is made from the Alcoholic solution, the milky turbidity of the mixture clearing up at the same time. These small particles are very liable to irritate the fauces and the glottis, and may give the patient a dislike to a further continuance of the gargle.

SALOL IN OZÆNA.

In a case of Ozæna of unknown origin, which was accompanied by considerable hypertrophy of the internal nasal structures and the retropharynx, the offensive smell was quickly annihilated, although, of course, the hypertrophy was not done away with. The local treatment in this case consisted of the insufflation of equal parts of Salol and Talcum. After some time it was necessary to irrigate with a solution of Acetico-Tartrate of Alum, and use other local measures. We had no other cases of nasal affections on which to improve our opportunity.

SALOL, ITS ACTION IN THE STOMACH AND DIGESTIVE TRACT GENERALLY.

Now, as to the action of Salol in the stomach and the digestive tract generally. In this connection one point must be mentioned which is very favorable to Salol ; it is this, that the stomach shows hardly any appreciable reaction on the ingestion of Salol. *Every practising physician is well aware of the fact that after considerable doses of Salicylic Acid or Salicylate of Soda the stomach responds with nausea and vomiting.* Larger doses of Phenol we are unable to introduce into the system, on account of its intense local action, which often is associated with the collapse, due to the general action of Carbolic Acid. While administering Salol, a preparation containing so much of the two constituents referred to, we were naturally anxious to register its action on the stomach. Experience is decidedly in favor of this Phenol-Ether. We have not seen a single case where it has shown in moderate doses disagreeable effects or complications, although we occasionally had to deal with very sensitive individuals. In various cases the appearance of the tongue changed most satisfactorily after using it for a short time only, and the appetite, as well as the general condition of the patients, was improved. We cannot say whether this action is due to its influence on the stomach alone, since it is hardly soluble ; perhaps the effect is due to the same process which we have described in the case of the phthisical patient above mentioned who used the Salol-mouth-wash, since Salol, the way we administer it, passes through the mouth in its pure state. It is, however, not improbable that in the presence of fatty substances in the stomach a partial solution of Salol takes place. The amount given at a dose has been immaterial as to its effect on the stomach, according to our observations. Beginning with tentative doses of 0.5 Gm. (gr. viii.), and feeling our way up to 2.0 Gm. (gr. xxx.), we did not observe any ill effects, not even in consumptives. Eructations, vomiting, or loss of appetite were never present. It was equally well borne by patients with or without fever. Two individuals complained of the bland taste of the drug. One was the same to whom we have previously referred, who said that the taste did not agree with him ; the other was a female patient, a case of the most stubborn, articular rheumatism to be met with, who had previously taken enormous quantities of Salicylate Soda and Antipyrine ; but there never was any violent reaction on the part of the stomach, palate, or œsophagus.

SALOL IN JAUNDICE.

In a case of Jaundice, of unknown origin, in which frequently the temperature would rise up to 39.7° C. (103.5° F.) for many weeks, Salol was given as an antipyretic. On this the temperature fell, as will be shown later on, and during the administration of the Phenol-Ether the icteric hue of the skin decreased much more rapidly. Perhaps this fact may confirm the view often expressed by some that Jaundice may occasionally have a parasitic origin, since this strongly antiseptic drug caused the skin to become paler. First 4.0 Gm. (3 i.) and then 2.0 Gm. (3 ss.) were sufficient to keep the temperature normal.

SALOL IN ABDOMINAL TYPHOID.

We further had the opportunity to use the new preparation in a case of Abdominal Typhoid, which came under our treatment in the second week of its course.

Our only intention was in this case to make use of the anti-febrile action of Salol. The appearance of the tongue changed rapidly for the better, and soon it did not in the least resemble the tongue of a patient with Typhoid Fever ; at the same time the patient "felt tolerably well," as he expressed it. The number of evacuations, which had always been frequent (up to five) before, decreased, and one movement a day became the rule. Perhaps the presence of the two constituents of Salol in the intestines has the influence to prevent the intensely irritative action of the typhoid virus on the intestinal mucous mem-

brane which was exerted before the administration of the Phenol-Ether. This one case certainly is too ambiguous to serve as an example in this direction, the more so since it ultimately developed unexpected complications.

SALOL IN PULMONARY AFFECTIONS.

In pulmonary affections we felt compelled to make use of Salol frequently, more especially in tuberculous processes, for the purpose of controlling the hectic fever principally. These patients bore Salol very well; its antifebrile action was perfect. Its influence on the local process itself seems to be just as problematic as all other therapeutic means which are intended to confine the progress of these destructive processes going on in the lungs. The length of time in which we could make observations was, perhaps, not sufficient, since we had to deal mostly with the far-advanced stages of phthisis, so that after the use of Salol for many weeks we could not even expect to see any decisive progress. We should say, at any rate, that it can hardly be supposed to be an indifferent matter if two such decidedly antiparasitic drugs circulate in the system in considerable quantities. Perhaps we would be more successful if we could use Salol in the initiatory stages of this pernicious disease, and its administration is therefore strongly to be recommended, if for no other purpose than to act on the exhausting hectic fever and on the bad condition of the mouth, due to contact with and the retention of parts of the tuberculous sputa. The latter indication also holds good for individuals in a state of great exhaustion, which creates a *nidus* for colonies of any number of micro-organisms and parasites (*Soor*, etc.), and, furthermore, because in those last stages of the disease appetite and nutrition generally are very low. Those, however, who have frequently seen how little influence even excellent antiseptic drugs have on the course of tubercular disease are fully justified in being somewhat chary as to the promising action of Salol. If we are right, however, in making subcutaneous injections of Carbolic Acid in solution in tuberculous patients, we are still more justified in proposing their treatment with Salol, since greater quantities of Phenol may thus be introduced into the system, without the slightest harm, than by the subcutaneous method, and, besides, we have the advantage that we reduce the fever. The best therapeutic procedure in pulmonary tuberculosis, probably, is local treatment of some kind; which this should be remains still obscure.

One circumstance is of importance in this respect; Salol, in consequence of its slow absorption, is perhaps of considerable advantage in preventing the ultimate localization of the tubercular virus in the intestinal tract, since it deprives the micro-organisms of their conditions of growth, even if it does not produce complete sterilization. By reducing the fever in four cases of Phthisis, we have certainly benefited them very considerably. Two of these died on account of extensive destruction of lung-tissue; a third was lost from observation, and we are therefore not able to compare his present condition with that which developed during our treatment. Perhaps Salol insufflations may act very favorably on laryngeal ulcerations.

SALOL IN THE BLOOD CIRCULATION.

It has not been investigated yet in what condition the constituents of Salol are borne along in the circulation of the blood. We have never observed any untoward effects from remedial doses, such as are seen after large doses of Phenol—*e.g.*, Tinnitus Aurium, Toxic Symptoms, Cephalalgia, and Muscular Weakness verging into complete collapse. They certainly belong to real intoxication, of which later on. We never had occasion to give more than 6,0 Gm. (3 iss.) in twenty-four hours in divided doses. Just before closing this paper experience taught us that similar toxic effects may be produced by the use of Salol, if we do not confine ourselves as to quantity and to time of administration to the above limits. The excretion of Salol from the blood through the kidneys begins very early, and is appreciable even after comparatively small doses; it is evident from the appearance of the urine, which has the characteristic olive color of Carbolic Urine. Only if inspected in thin strata is its original yellow color faintly perceptible. After standing for some time this color is intensified, and approaches deep black, especially in large quantities of urine; but even then a thin transparent stratum will preserve lighter tints, from dark yellow to light green. The more Salol is introduced into the system the longer will the urine show this color reaction, and the sooner will it develop the darkest tint. At the same time, its reaction is strongly acid, and if there is no disease of the kidneys and urinary tracts, it remains absolutely clear and translucent. All those constituents characteristic of nephritic irritation are wanting, especially albumen. This Carbolic Urine we have observed in every one of our cases. Even after very small doses, 0,5 Gm. (gr. viii.), in twenty-four hours it would show after standing for some length of time. The urine of a female patient who took from noon to night Salol in four doses of 1,0 Gm. (gr. xv.) was of a deep black by midnight. As long as the administration of the drug is continued the urine remains black. In one case the last two doses of Salol, 0,75 Gm. (gr. xiss.) each, were given on January 2d; the urine voided by this patient on the 5th of January still showed the presence of Phenol from its color, although the whole quan-

tity of Salol administered during five consecutive days was only 10.5 Gm. (3 ii. ℥ii.). Another patient had taken 6.0 Gm. (3 iss.) of Salol on December 15th; none was given during the next two days, and yet the urine passed on the 17th was of a deep black hue. In another case 4.5 Gm. (3 i. and gr. viii.) had been given every day, and the discoloration described was present fully five days after discontinuing the Salol. The elimination of Salol, therefore, takes place very slowly, and it appears that this drug is accumulated to a great extent in the system, if given in considerable quantities. Otherwise the elimination of its constituents would not last for such a long period. This long retention of Salol by the system may be efficient in increasing the therapeutic effect of the remedy. As to the excretory products of the salicylated Phenol-Ether in the urine the same holds true generally what has been stated before, and also the experiences made in regard to the elimination of Salicylic Acid and Phenol themselves. Salicylic Acid reappears in the urine unchanged, while Phenol combines with Sulphuric Acid to form Sulpho-Carbohic Acid. Albumen has never been found in the urine after remedial doses of Salol; that after toxic doses it may be present, as well as after large doses of drugs similar to it in their action, is possible.

SALOL IN DISEASES OF THE URINARY ORGANS.

We are enabled to state that Salol has a very favorable action on diseases of the urinary organs from our observations made on patients suffering from cystitis. In the first place, the urine loses its strong ammoniacal odor, since its reaction always becomes acid after the administration of Salol. Our cases were very obstinate ones; a considerable sediment was formed in the urine, which, from the fact that it was kept in a room, and that the urine contained much albumen, could not consist of urates, but of pus only: this sediment sometimes formed strata from two to three Cm. in height on the bottom of the vessels. After the daily use of 3.0 Gm., 4.0 Gm. up to 6.0 Gm. (45, 60 to 90 grains) of Salol in divided doses for several days, the immense number of pus-corpuseles was reduced considerably, macroscopically as well as microscopically. With this decrease of the pus and the increase of the acidity in the reaction of the urine, the local symptoms of cystitis—*i.e.* tenesmus and pain, were much improved. The innumerable bacteria and micrococci, which undoubtedly promote, if not cause, the ammoniacal decomposition of the urine, retained their vivid, short, shooting, and gyratory movements, even in the strongly acid urine, for an astonishing length of time. It might be opportune to use the Salol-mixture above referred to for washing out the bladder; but we never felt called upon to do it in our cases. In using it, the fact would have to be borne in mind that, as previously stated Salol is precipitated in small crystals from this solution after some time standing; these particles of Salol might form a nucleus for incrustations of urates, the latter being so frequently present in abundance in cases of cystitis.

SALOL IN GYNECOLOGY.

In connection with the foregoing we will suggest that the same Salol-mixture might be useful as a deodorant and disinfectant of the female genital organs, on the same principles as reported in relation to mouth and pharynx. The corrugated condition of the vaginal mucous membrane would greatly facilitate the use of this mixture, as the small particles of Salol would be apt to be retained in its folds and nooks, and thus have a lasting effect. In a case of abortion, with foul-smelling discharges and persistent uterine hemorrhages, it was found to act thus very satisfactorily. The emulsion of Salol, which it has been proposed by others should be used in cases of gonorrhœa, we have never had occasion to try; but we may suppose, reasoning from analogy, that it would have the expected and desired effect in such cases also.

SALOL IN ARTICULAR RHEUMATISM AND ALLIED DISEASES.

Our next will be the principal topic in connection with the use of Salol—*viz.*, its administration in Articular rheumatism and allied diseases. Those who first gave it did so with the express purpose of finding a substitute for Salicylic Acid and its Soda Salt, in order to obviate the disagreeable effects accompanying the administration of such large doses of them as are required to produce a decided action on some cases of *Polyarthritis rheumatica*. In the course of time the salicylate of Phenol-Ether has been found reliable in other diseases, some of which we have not as yet mentioned. We would refer the reader to the "Correspondenzblatt für Schweizer Aerzte," Vol. XVI., 1886, in which the first publication has appeared. The number of cases of this kind treated by us are about twenty. In every one of them Salol was given with some kind of success. Two among them were conspicuous by their extraordinary chronic character. In one of them, a servant-girl of twenty-one, joints as well as muscles were severely affected, there was rheumatic Opisthotonus, Trismus, various stages of swelling, atrophied muscles, deformities of the articulations of the hands and fingers; Salicylic Acid as well as Antipyrine had been taken in large doses already (the latter up to 8.0 Gm. (3 ii.)

in twenty-four hours); inunctions, massage, sulphur and hot sand baths, electricity and quinine had been tried without any success. Although a certain improvement was noticeable as to the opisthotonus and the trismus, and also as to the general condition of the patient, Salol in this case did not have the expected effect; on the night after the first administration of Salol the patient felt somewhat better, so that she was able to rest much better than she had done for a long time. While the intense pain was somewhat subdued, a complete cure under Salol-treatment was as impossible in this case as it was under treatment by salicylic acid or by antipyrine, so frequently found efficacious. A similar experience we had in the case of a female patient, fifty-five years old, who had been suffering from articular rheumatism for at least five years. Here also the only effect attained was an improvement in the periodic attacks of pain, but without any action on the general course of the disease. In comparatively recent cases of rheumatic affections, however, Salol gives excellent, nay almost unique results; we may rely with absolute certainty almost on the prompt and decisive action of the drug in question. The affection disappears equally rapid, whether one or more joints are implicated. Rheumatic pains, if complicated with fever and swelling, are as successfully treated as those in which neither of these complications exists. One of the first signs of improvement is sleep, a good night's rest being obtained after the first doses have been taken. This fact, as stated by the patients, is certainly due to the lessening of pain on the least movement, which is the main cause of sleeplessness. With this lessening of pain there is a subsidence of swelling. After the first dose of 2,0 Gm. (3 ss.) a considerable improvement is noticed already, which continues in remarkable progression while the administration of Salol is continued. It was rarely necessary to give more than from 10,0 Gm.—12,0 Gm. (3 iiss. to 3 iii.), in order to cut short severe rheumatic pains, and the Salol was only continued after this to do away with what little stiffness and tension remained. With the decrease of the subjective feeling of pain, painfulness on being touched disappeared also. We do not know what influence Salol may have in cardiac complications on a rheumatic basis, since none of our cases had any cardiac trouble. The same holds true as to cutaneous affections, frequently seen in connection with *Polyarthritidis rheumatica*, such as *Erythema nodosum*, *Urticaria*, *Malaria*, *Pelosis*, etc. Since, however, all these complications disappear frequently during the use of other allied specifics, it is hardly doubtful that Salol will do away with them also. In order to cover the whole field of rheumatic troubles, we must add that in cases where pain and swelling were confined to muscles, Salol has occasionally caused a rapid decline of these symptoms too; but this action is not nearly as precise and reliable as is its action in articular affections; sometimes the pain is not influenced at all by large quantities of the drug. As is well known, the question whether muscular rheumatism so called has any relations at all to the articular variety is still *subjudice*.

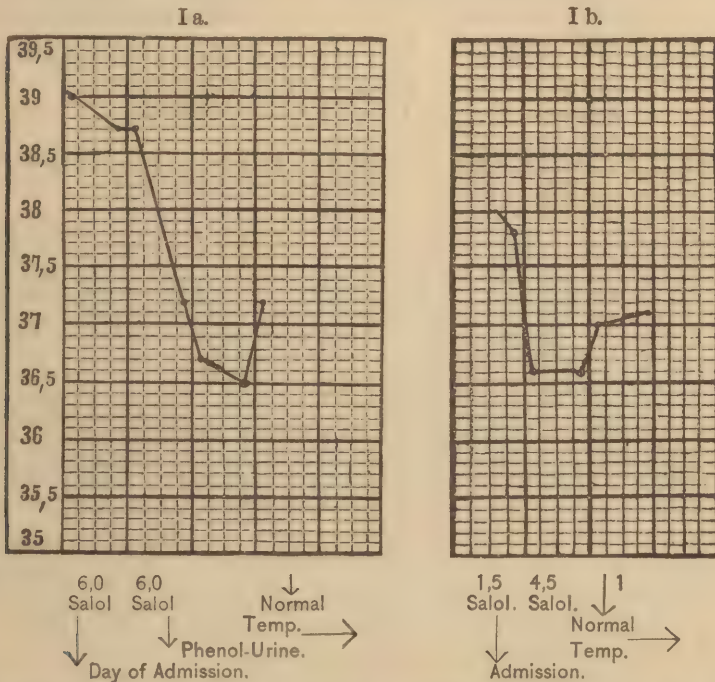
Whether the general course of the disease is changed, we would not like to decide; this is certain, that the acute stage is confined to a short period of a very few days. Relapses have been observed by us in three instances. The first two patients (one a butcher, the other a blacksmith) directly went about their business. The butcher returned the first time on the third day after having been discharged, and at the second relapse he returned four days after his discharge. The blacksmith had an interval of two days between the first attack, after which he was discharged cured, and the relapse. A factory-girl who left us on her own request, with some tension and stiffness remaining in the affected joints, returned after four days, and had a severe relapse. *A thorough and lasting effect is attained by continuing the administration of Salol in decreasing doses.* Thus we had the habit of reducing the dose after the subsidence of all acute symptoms gradually from 6,0 Gm. (3 iss.) down to 1,0 Gm. (gr. xv.) per day; this we gave until the patients were discharged. We rarely had to hear complaints about renewed attacks of pain. In all cases "Carbol-Urine" was observed. *Tinnitus aurium* after large doses was present in three only out of the forty cases. A female patient who was somewhat hard of hearing had misunderstood the direction given her—2,0 Gm., t. i. d.—and took instead 2,0 Gm. every two hours; within six hours she had therefore taken no less than 6,0 Gm. (3 iss.) of Salol, and thereby saturated her system pretty well with Phenol (40% = 2,4 Gm. = 37 grains), which dose is surprisingly high, if we consider that the maximum daily dose prescribed by the German Pharmacopœia is 0,5 Gm. (gr. viii.). Another patient had hidden away several powders, and took them the next day in rapid succession, so that she took altogether 8,0 Gm. (3 ii.) of Salol; that night she vomited severely, had gastralgia and tinnitus. This would certainly constitute a mild degree of toxic effect. The symptoms subsided soon, only the tinnitus persisting somewhat longer. A third patient, with a moderately febrile rheumatic attack, who had suffered occasionally from tinnitus before, for which she had several times sought medical advice, was attacked with violent tinnitus after having taken Salicylate of Soda, so that this salt had to be discontinued. Since Antipyrine did not exert any favorable influence, she was given Salol in doses of 2,0 Gm. (3 ss.), t. i. d. This was followed by slight tinnitus, but had the desired effect. On the respiration Salol does not act as strongly as Salicylic Acid; we never saw it cause dyspœa. The decline of temperature in cases of a febrile type is always accompanied by a moderate perspiration.

SALOL IN NEURALGIA OF A RHEUMATIC ORIGIN.

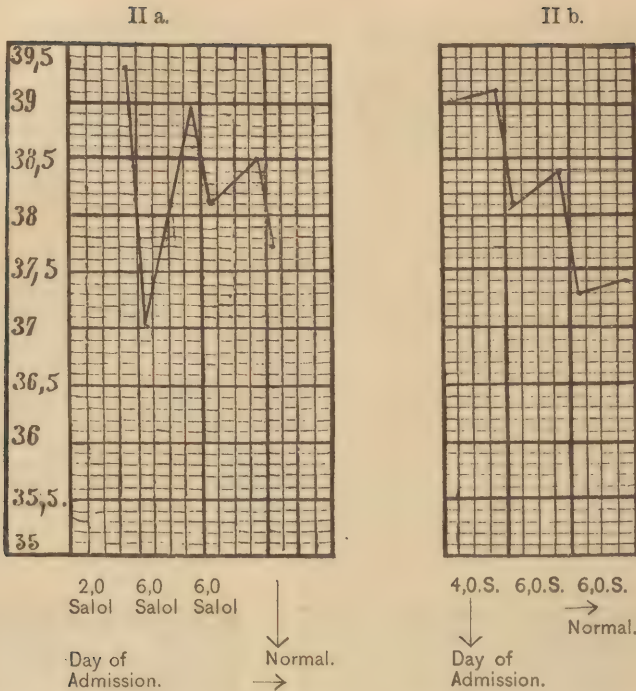
We are in a position to confirm the favorable action of Salol on some forms of Neuralgia of rheumatic origin. Sanitäts-Rath, Dr. KLEEFELD, had occasion to convince himself of the prompt action of Salol in three doses of 2,0 Gm. (3 ss.) each, which he took against a moderate attack of Sciatica, accompanied by slight arthritic pain in the left wrist-joint. It had existed for about a week, when, after the dose mentioned, it almost entirely disappeared.

The fever-curve is dependent on the amount of Salol taken, as we will show further on. With 2,0 Gm. (3 ss.), t. i. d., we have been able to observe two different types of curves.

The temperature would either fall on the first or second day already (I a, I b) in such a manner that it remained normal throughout afterward—the very picture of a true crisis—or it would fall in successive steps, so that there would be higher evening temperatures (II a, II b)—that is, a return of the elevation was noticeable during the time from morning till evening. If we accept the modern view that Polyarthritis is a typical (self-limited) disease, running either a longer or a shorter course—the shorter lasting from six to eight, the longer from eleven to thirteen days—we might assume that in the cases represented by curves I a and I b the administration of Salol just coincided with the lysis (or decline) in the cycle (or regular course) of the disease; rheumatic patients, as a rule, try to get along for some days outside of the hospital before they enter it. In the cases represented by curves II a and II b, however, we might suppose that the administration of Salol was begun at such a stage of the disease as was still somewhat distant (say two to three days) from the end of the cycle. The former assumption relating to curves I. is somewhat plausible, but the chance of its happening would still be remarkable, because we observed these forms very frequently.



Perhaps we might get nearer to the truth in the matter, if, in an entirely new case, we could succeed on the first day already in confining the temperature to the normal by giving Salol. If we assume that articular rheumatism is due to the action of micro-organisms, we might suppose that in the cases giving the curves I. the various generations of micro-organisms were suddenly annihilated; that in the cases II., on the other hand, the microbes would retain a greater power of resistance to the impregnation of the system with Carbol which showed itself in the suppression of the fever and the general symptoms by successive steps. We were never able to observe any change in the pulse by the influence of the Phenol-Ether.



ANTI-FEBRILE ACTION OF SALOL IN FEVER, ESPECIALLY THAT WHICH ACCOMPANIES ACUTE DISEASES.

The second great domain in which Salol will probably be extensively used is in that of Fever, especially that which accompanies acute diseases. We were enabled to convince ourselves in various cases of the anti-febrile action of the salicylic Phenol-Ether. And in these also we were never forced to go higher with our dose than 6,0 Gm. (3 iss.). If we remember that in acute hyper-pyretic diseases the heart originally has a strong tendency to weakness and collapse, and that quite large doses of *Acidum salicylicum* are necessary to develop a sufficient antipyretic effect, we must certainly welcome Salol gladly, since a dose of 6,0 Gm. (3 iss.) produces absolutely sufficient effects, and is never followed by any signs of cardiac debility, small pulse, or collapse. To this must be added the disagreeable vomiting and tinnitus, which may have a bad influence on a feverish patient, and which with Salol is out of the question. And besides, it may not be an indifferent matter, in regard to the development of micro-organisms, which probably exist in the system of those sick with an acute infectious disease, whether Phenol and Salicylic Acid circulate in the blood in such large quantities, and having at the same time such a slow tendency to being eliminated.

In the following we will describe the action of Salol on several other febrile diseases in which it was administered for the sole purpose of combating high temperatures. In these we have invariably had occasion to be well satisfied with the action of Salol. Its doses are regulated in accordance with the strength and general condition of the patient. In weak individuals we would begin with tentative doses of 0,5 Gm. (gr. viii.), and then increase it until the desired effect was obtained. Our experience has been that Salol is equal in many regards to other anti-febrile remedies. It was self-evident that such tentative doses of 0,5 Gm. (gr. viii.), even if frequently given, would effect no remission in cases of high and even of moderate fever. Even sensitive patients, suffering with phthisis, would show no reaction on small doses frequently repeated. The action of these small quantities does not accumulate, as it seems, but they are quickly eliminated, so that no effect is realized. Only if given in such small intervals of time that in consequence of its slow absorption in the course of a few hours, an accumulation of the Salol in the system must take place, then even small doses will produce remissions, as, for instance in the case of a phthisical woman who had enormously high temperature, as a rule, in the afternoon. In Table III a we give the average temperature, and in Table III b the same as modified by the action of Salol :

III a.			III b.			Salol.																							
7 A.M.	37,5° C.	= 99,5° F.	37,8° C.	= 100° F.	<table border="0"> <tr> <td>9 A.M.</td> <td>0,5 Gm.</td> <td>= 7½ grs.</td> </tr> <tr> <td>9.30</td> <td>0,5 "</td> <td>= 7½ "</td> </tr> <tr> <td>10</td> <td>0,5 "</td> <td>= 7½ "</td> </tr> <tr> <td>10.30</td> <td>0,5 "</td> <td>= 7½ "</td> </tr> <tr> <td>11</td> <td>0,5 "</td> <td>= 7½ "</td> </tr> <tr> <td>11.30</td> <td>0,5 "</td> <td>= 7½ "</td> </tr> <tr> <td>12 M.</td> <td>0,5 "</td> <td>= 7½ "</td> </tr> </table>	9 A.M.	0,5 Gm.	= 7½ grs.	9.30	0,5 "	= 7½ "	10	0,5 "	= 7½ "	10.30	0,5 "	= 7½ "	11	0,5 "	= 7½ "	11.30	0,5 "	= 7½ "	12 M.	0,5 "	= 7½ "	9	38,0 "	= 100,4 "
9 A.M.	0,5 Gm.	= 7½ grs.																											
9.30	0,5 "	= 7½ "																											
10	0,5 "	= 7½ "																											
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11	0,5 "	= 7½ "																											
11.30	0,5 "	= 7½ "																											
12 M.	0,5 "	= 7½ "																											
11	39,0 "	= 102,2 "	39,8 "	= 103,6 "																									
1 P.M.	39,6 "	= 103,2 "	38,4 "	= 101,1 "																									
3	39,0 "	= 102,2 "	39,0 "	= 102,2 "																									
5	40,1 "	= 104,1 "	38,2 "	= 100,7 "																									
7	39,4 "	= 102,9 "	38,8 "	= 101,8 "																									
9	39,1 "	= 102,3 "	39,4 "	= 102,9 "																									

From this it is seen that in three hours 3,5 Gm. (53 grains) have been introduced, and that the action of small doses accumulating is perceptible, even if it is of short duration and not very decided. The extremely high afternoon temperature had been reduced from 40,1° C. (104,2° F.) to 38,2° C. (100,7° F.), but at night the temperatures were equally high. But if between the small doses a single large one is given, the action of the drug is at once more energetic; the temperature at night is a low one.

III c.			Salol.	
7 A.M.	38,0° C.	= 100,4° F.	7 A.M.	0,5 Gm. = 7½ grs.
9	38,0 "	= 100,4 "	8	0,5 " = 7½ "
11	38,8 "	= 101,8 "	9	0,5 " = 7½ "
1 P.M.	39,2 "	= 102,5 "	10	0,5 " = 7½ "
3	40,2 "	= 104,3 "	11	0,5 " = 7½ "
5	37,4 "	= 99,3 "	12 M.	1,0 " = 15 "
7	36,8 "	= 98,2 "	3 P.M.	0,5 " = 7½ "
			4	1,0 " = 15 "

This effect is due to the decisive doses of 1,0 Gm. (gr. xv.) given at 1 and at 4 o'clock. That the temperature is still very high at 3 is due to the period of latency—i.e., the time during which the preparation is absorbed, of which further on. Sometimes even 1,0 Gm. (gr. xv.) will not suffice in cases with obstinate fever, as will be seen from Table IV. of the same curve, where 1,0 Gm. (gr. xv.) of Salol has been given every hour from 9 A.M. to 2 P.M.

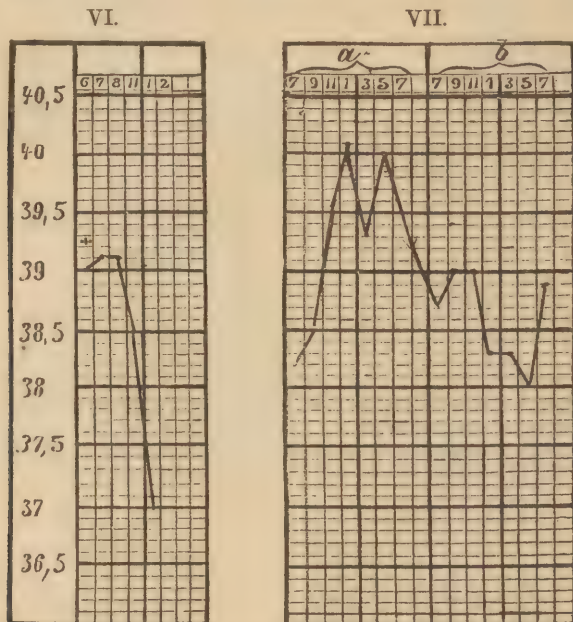
IV.			Salol.	
7 A.M.	38,3° C.	= 100,9° F.	7 A.M.	1,0 Gm.
9	38,4 "	= 101,1 "	10	1,0 "
11	37,3 "	= 99,1 "	11	1,0 "
1 P.M.	38,3 "	= 100,9 "	12 M.	1,0 "
3	39,5 "	= 103,1 "	1 P.M.	1,0 "
4	37,3 "	= 99,1 "	2	1,0 "
7	36,8 "	= 98,2 "		

The real object would have been attained if the afternoon temperature could have been kept within bounds, yet it has run up to 39,5° C. (103, 1° F.), to fall the more rapidly toward evening. It is peculiar that after the remission at 11 A.M. a new rise of temperature till 3 P.M. takes place, although Salol was taken regularly; the evening temperature is low, while without Salol it always was found to be between 39° C. (102,2° F.) and 40° C. (104° F.). This observation has often been made in phthisical patients, and we have deemed it probable that the exacerbation taking place, in spite of large doses of Salol, may be referred to the digestive process following the 12 o'clock dinner. And then, maybe, the assumption is justified that the first doses of Salol are most easily and quickly absorbed into the circulation, while by the increasing saturation of the system with the constituents of Salol, their absorption as well as their action is rendered slower and more protracted.

The effect of doses of 1,5 Gm. (23 grains) given to the same patient at 8, 11, 2, and 5 o'clock was much more evident (V.). The curve is distinguished by the moderation of its rises and falls in regard to afternoon temperatures as well as in regard to evening temperatures. It has been repeatedly observed by us that a dose of 1,5 Gm. (23 grains) of Salol given against moderate fever undoubtedly causes a reduction of temperature. If the fever is 38°—38,5° C. (100,4°—101,3° F.) a single dose of 1,5 Gm. (23 grains) will effect a reduction of 1,5°—2,0° C. (2,7—3,6° F.)—i.e., a fall to about 36,5° C. (97,7° F.), so that we are enabled to reduce a constant daily increase of temperature of this range down to normal.

V.		
7 A.M.	37,4° C.	= 99,3° F.
9	37,9 "	= 100,2 "
11	38,4 "	= 101,1 "
1 P.M.	38,4 "	= 101,1 "
3	38,8 "	= 101,8 "
5	37,1 "	= 98,7 "
7	37,5 "	= 99,5 "

But there can be no doubt that the best dose to counteract even higher temperatures is 2.0 Gm. (3 ss.) of Salol. In giving this quantity, we may hope for a satisfactory effect quite certainly. It is necessary—as it is, indeed, with all antipyretic remedies—first to obtain a clear view of the fever movement in order to interfere successfully with its rise. Our observations have shown that the dose mentioned begins to act from two to three hours after its ingestion, as is evident from the following examples (VI., VII.), of which we have seen quite a number.



Curve VI. is from a case of *Peritonitis acutissima*, which ended fatally in four days. At 6 A.M. 2.0 Gm. (3 ss.) of Salol was given, and yet we see that the temperature has a tendency to rise at as late a period as 6 to 7 P.M., that there is a check to this during the second hour, which is changed to a decline during the third hour, after 8 o'clock. A phthisical patient (VII.), whose mean average temperature corresponds approximately to Curve VII a (December 24th), was given 2.0 Gm. (3 ss.) of Salol at 8 A.M., and this produced an effect registered in Curve VII b. On those days when no Salol was administered the fever went up in the forenoon to 40° C. (104° F.); in Curve VII b, however, we notice that the Acme is checked in such a manner, that the elevation ceases during the second hour, and a reduction of temperature begins after 11 A.M.—*i.e.*, three hours after ingestion of the Salol; the effect actually begins before the temperature becomes stationary. The same result was obtained in cases where an exacerbation of the fever was wont to come toward evening, if we gave Salol in the course of the forenoon.

VIII.

A.		B.	
8 A.M.	39,1° C. = 102,3° F.	38,6° C. = 101,4° F.	
11 "	37,8 " = 100,0 "	37,9 " = 100,2 "	
6 P.M.	38,9 " = 102,0 "	37,9 " = 100,2 "	

In A. is given the type of such a curve in a mild case of diphtheria in an adult; as soon as we employed 2.0 Gm. (3 ss.) of Salol at about 1.30 P.M., the curve was modified as shown in B. Calculating two to three hours for the development of the antipyretic action, it must commence between 3.30 and 4.30 P.M.; therefore the evening-temperature ought not to rise as far as on other days (A.); it was, according to expectation, not higher than at about noon.

We must remark in this connection that in giving Salol as an antipyretic, we have to take into consideration the spontaneous reductions of the fever. In this its action is similar to other antipyretics. If Salol be given at a time when a spontaneous reduction of the pathological body-heat coincides with the development of its action, the success obtained will be much greater by moderate doses even, than when it is administered at a time at which the fever is rising, as was the case for instance in VIII. B.; that was the

reason why in this case the fever was not reduced by the dose given, but yet was prevented from further rising. We can illustrate this by referring to a case of Abdominal Typhoid. The daily curve about corresponds to IX. a and b.

IX a.			IX b			IX c		
7 A.M.	40,0°	C.=104,0° F.	40,0°	C.=104,0° F.	39,5°	C.=103,1° F.		
9 "	39,7 "	"=103,4 "	39,7 "	"=103,4 "	39,0 "	"=102,2 "		
11 "	39,3 "	"=102,7 "	39,4 "	"=102,9 "	37,4 "	"=99,3 "		
1 P.M.	40,0 "	"=104,0 "	39,6 "	"=103,2 "	38,2 "	"=100,7 "		
3 "	40,5 "	"=104,9 "	40,1 "	"=104,2 "	40,5 "	"=104,9 "		
5 "	40,5 "	"=104,9 "	40,6 "	"=105,1 "	38,5 "	"=101,3 "		
7 "	40,5 "	"=104,9 "	40,4 "	"=104,7 "	37,5 "	"=99,5 "		

If 2,0 Gm. (3 ss.) of Salol are given at 8 A.M. (IX c) at the time of the spontaneous reduction, the temperature would fall to normal after three hours. At noon 2,0 Gm. (3 ss.) were again given, which could only develop their action after a period of latency—*i.e.*, after two or three hours. The effect, therefore, had to become noticeable between 3 and 4 P.M. That it actually must have begun about this time is evident from the measurement made at 5 P.M., since the temperature has fallen fully 2° C. (4,5° F.), while on days without Salol (IX a and b) it remained at about this height. Another 2,0 Gm. (3 ss.), given at 4 P.M., was able to overcome the evening temperature, and depress it down to normal (IX c).

From this table we can at the same time estimate the length of time during which 2,0 Gm. (3 ss.) of Salol will act. We gave the 2,0 Gm. (3 ss.) at 8 A.M., which need about two, two and a half, and three hours to develop full action, which is the case between 10 and 11; at 1 P.M. the temperature again slowly begins to rise—*i.e.*, the action of this dose lasts from two to two and a half hours. The same is evident from trials made on the same individual (X.) on other days, when we gave the 2,0 Gm. (3 ss.) of Salol at 9 A.M.

X.

7 A.M.	38,1°	C.=100,5° F.
9 "	38,1 "	"=100,5 "
11 "	37,8 "	"=100,0 "
1 P.M.	37,4 "	"=99,3 "
3 "	38,5 "	"=101,3 "
5 "	38,9 "	"=102,0 "

After only two hours—at 11 A.M.—the action is noticeable; it lasts for about two or three hours up to between 1 and 3 o'clock, and at 3 P.M. the temperature is again on the rise. Table XI. belongs to a case of *Erysipelas faciei bullosum*, in which always a rise of temperature took place in the morning.

XI.

7 A.M.	39,7°	C.=103,4° F.
9 "	39,8 "	"=103,6 "
11 "	39,9 "	"=103,8 "
1 P.M.	40,1 "	"=104,1 "
3 "	39,5 "	"=103,1 "
5 "	40,0 "	"=104,0 "
7 "	38,6 "	"=101,4 "

We gave 2,0 Gm. (3 ss.) of Salol at 11 A.M., during the stage of increase. Now the temperature still rose up to 1 P.M. (period of latency, two hours), and receded from that time until after 3 o'clock (two or three hours). Since we gave another 2,0 Gm. (3 ss.) of Salol at 3, it fell again after 5 in accordance with the well-known period of latency. That the change, caused by the 2,0 Gm. (3 ss.) after 11 A.M., amounts to only 0,5° C. (1,1° F.) is explained by the fact that its action does not coincide with a period of spontaneous reduction, but with that of an increase of temperature.

Thus, if we first observe the course of the fever in our cases, we are able—since the period of latency (development of the action) and the average duration of the effect is known—to keep the fever down within moderate limits, as, for instance, in the case of Typhoid-fever afore-mentioned (curves IX.). When we gave, on this principle, 6,0 Gm. (3 iss.) of Salol in twenty-four hours, we obtained results, which are registered in the following tables (XII a and b).

XII a.			XII b		
7 A.M.	39,3°	C.=102,7° F.	39,3°	C.=102,7° F.	
9 "	38,5 "	"=101,3 "	39,1 "	"=102,3 "	2,0 Gm.—Salol.
11 "	37,7 "	"=99,8 "	38,3 "	"=100,9 "	2,0 Gm.—Salol.
1 P.M.	36,9 "	"=98,4 "	37,4 "	"=99,3 "	
3 "	36,7 "	"=98 "	37,2 "	"=98,9 "	2,0 Gm.—Salol.
5 "	36,7 "	"=98 "	37,0 "	"=98,6 "	
7 "	37,7 "	"=99,8 "	37,0 "	"=98,6 "	

And also in a second case of *Erysipelas faciei bulbosum* (Table XIII).

XIII.

7 A.M.	39,7°	C.	=	103,4°	F.
9 "	39,4	"	=	102,9	"
12 "	39,0	"	=	102,2	"
3 P.M.	38,2	"	=	100,7	"
6 "	37,4	"	=	99,3	"

As to XII a and b, we must suppose that when we give 2,0 Gm. (3 ss.) of Salol at 9 A.M. its action begins about 11, and lasts for two or three hours. If we give another 2,0 Gm. (3 ss.) at 11 A.M., the period of latency coincides with the time during which the effect of the first dose is continuing; the second dose (at 11) comes into action as soon as the effect of the first dose is at an end; therefore we have no interruption of the decrease in temperature, but a more energetic action. If, in addition, we gave again 2,0 Gm. (3 ss.) at 3 P.M., the evening temperature was equally reduced in accordance with the well-known intervals of time.

SYNOPSIS AND PROGNOSIS.

Generally speaking, we must say that large doses of Salol give the best antipyretic action, and that their maximum effect is attained about four or five hours after administration (including the period of latency or absorption). From 2,0—3,0 Gm. (3 ss.—gr. 45), according to the intensity of the fever, is sufficient for a dose. The fall of temperature is accompanied by a moderate perspiration, which is not disagreeably strong. The action of Salol never causes any abnormal action of the pulse or the respiration. The frequency of the pulse, as would appear from some observations, keeps pace with the fall of the temperature—*i. e.*, it is reduced.

If we keep in mind that aside from its antipyretic action Salol is an excellent antiseptic, this drug appears of twofold value. We hasten to recommend the use of the new preparation to our colleagues very urgently; our supply was furnished most liberally by *Dr. F. von Heyden's successors* from their factory of chemicals at Radebeul, near Dresden. It is sufficient to recognize its advantages in the treatment of *Polyarthritiis rheumatica*, a disease so frequently met with, to say that it recommends itself. Practitioners generally will welcome it, because it is well to have at disposal a greater number of remedies from which to choose according to the individuality of the patient, and considering the many drawbacks of Salicylic Acid and its Soda-salt, it cannot be gainsaid that Salol may at a future time come to supersede these preparations. It is probable that by a more general and extended use of Salol, many other good properties may be discovered. The successes that we have had with Salol we are able to designate as absolutely and thoroughly satisfactory.

Since the introduction of Salol in the form of pills our sales have been extremely large, and the testimony to its efficacy in rheumatism and its allied diseases unqualified.

We call special attention to the fact that the Salol used by Dr. Georgi, as indicated in the preceding notes, was furnished from the factory of the patentees, Dr. F. von Heyden's successors at Radebeul-Dresden, and that we are sole agents for Salol from this factory in the United States of America and Canada, and that we use this salt entirely in our 2½ and 5 gr. Salol Pills.

W. H. SCHIEFFELIN & CO.,

170 & 172 WILLIAM STREET,

NEW YORK.

Put up in bottles of 100 pills and 500 pills each.

FOR SALE BY ALL DRUGGISTS.

In ordering please specify "W. H. S. & Co's."

PAGE'S VAPORIZER AND CRESOLENE.

The medical profession generally accept inhalation as the most effective plan for treating diseases of the throat and lungs. This method requires the use of

A POWERFUL AGENT WITH WHICH TO CHARGE THE AIR.

A SIMPLE AND EFFECTIVE APPARATUS.

An experience of five years has demonstrated that

PAGE'S VAPORIZER AND CRESOLENE

fulfill in a marked degree these two requisites.

The vaporizer is a metal apparatus, six inches high, consisting of a reservoir for the liquid, a disk to deflect the direct rays of heat, and a small lamp.

Cresolene ($C_6H_5CH_3O$) is a coal tar product, related to carbolic acid, but a more powerful germ destroyer. A large room is quickly permeated by Cresolene vapor, and it acts not only as a curative of Whooping Cough, Croup, Diphtheria, Scarlet Fever and other Zymotic diseases, but is a

PREVENTIVE

of these diseases, because it thoroughly disinfects the bed-clothing and furniture of the room.

The apparatus requires no attention and is more effective than an atomizer, less inconvenient, and the best medium for perfuming the sick room.

The following are extracts from letters:

ANTHONY COMSTOCK, New York Society for the Suppression of Vice: "Malignant Diphtheria in my home; Vaporizer and Cresolene used; cases recovered in two weeks; no others were affected. The physician in charge used the Vaporizer and Cresolene for another patient with like results. Children with Whooping Cough and persons with severe cold and bronchial troubles speedily recover after the use of Cresolene."

ERASTUS H. DOOLITTLE, of Smith, Doolittle & Smith, druggists, Boston: "A lady brought two children to Cottage Park, Winthrop, who had Whooping Cough, and as a result every child but two, and one adult, took it. Incessant coughing at night—the parents in some cases being obliged to attend constantly upon them all night. I procured several Vaporizers and distributed them. Most of the children slept through the entire night. The effect seemed to be almost instantaneous. Relief was given in all cases."

J. W. PINKHAM, M.D., Montclair, N. J.: "I have found Cresolene of great service in Whooping Cough, having used it in many cases. It also gives relief in Asthma. I am fully persuaded of its anti-spasmodic virtue."

J. D. PARISH, M.D., Burlington, N. J.: "At a full meeting of our County Medical Society I had the pleasure of offering for inspection one of your Vaporizers and Cresolene, and explain my satisfactory experience in using it with cases of Scarlet Fever and Whooping Cough."

Mrs. BARLOW, Wyvenhoe, Worthing, England: "We are extremely glad and thankful that our children are much better. The Cresolene has been immensely helpful, as the children have been spared the prolonged suffering which appears generally to accompany Whooping Cough. I have recommended it to several of my friends."

MISS EMMA THURSBY, 34 Gramercy Park, New York: "It is invaluable, and so pleasant to have in the sick chamber. My sister could not do without it. We all seem to derive much benefit from it. I should like to have another one for my own room, as I fancy it would relieve my cough."

JOHN F. DAVIS, S. S. White Dental Manufacturing Company, Boston: "When my children were taken with the Whooping Cough I began the use of Cresolene at once, and consider it a great blessing."

S. H. MURPHY, M.D., Glendale, N. Y.: "I have used the Vaporizer and Cresolene in six cases of Whooping Cough of long standing, with marked relief within 24 hours, and entire cure in from three to five days; have also used it in Nasal Catarrh, Bronchitis, Pharyngitis, Catarrhal and Diphtheritic, with great benefit. I think it of great value in Diphtheria."

Remarkable testimonials from all classes in the United States and Great Britain will be found in our circular, which we will mail on application.

For sale by all druggists.

W. H. Schieffelin & Co., NEW YORK,

Sole Agents.

COCAINE

AND ITS PREPARATIONS.

We again call the attention of the medical profession to our Cocaine and its preparations. But very few of the manufacturing chemists of this country have produced this article. We were early numbered among this very few, and our preparations have found their way into all parts of the country. The satisfactory results obtained have led to a large and increasing sale. The apparently ever widening scope of Cocaine has led to constant improvement in the process of manufacture, until the prices at which it may now be obtained enable physicians to include it in their armamentarium at little expense.

IMPORTANT NOTE ON COCAINE.

Our Cocaine is in Small Crystalline form. The advantage of this form over the long crystals is obvious when it is understood that the latter form contains a large percentage of water of crystallization.

In order, therefore, to secure the full effect of a given quantity of Cocaine the Smaller Crystalline form should always be employed.

We append a list of the various forms in which we offer Cocaine :

Cocaine,	Hydrochlorate (Muriate)	Crystals,	5, 10 and 15 grain vials.		
"	"	"	Solution, 2 per cent.,	1/2 oz. and	1 oz. vials.
"	"	"	"	"	"
"	Alkaloid,	5, 10 and 15	grain vials.		
"	Salicylate,	5, 10 and 15	grain vials.		
"	Oleate (5 per cent. Alkaloid),	1/2 oz. and	1 oz. vials.		
"	Granules (1-20 gr. Muriate),	bottles of	100 granules.		

For sale by all druggists.

W. H. Schieffelin & Co.,

Please specify "W. H. S. & CO."

NEW YORK.

Schieffelin's WINE OF COCA

AN AGREEABLE AND EFFICIENT

TONIC AND STIMULANT,

PREPARED IN A SPECIAL MANNER TO SECURE THE FULL EFFECT OF THE PLANT.

The highest authorities agree in according to the plant Erythroxyton, Coca, the following properties, viz. :

It braces and controls the enfeebled nervous system.

It surprisingly increases the muscular power and intellectual capacity.

It acts as a direct tonic upon the vocal chords, thus increasing the volume and clearness of the voice.

It overcomes the timidity of actors and public speakers, and imparts tone and vigor to the organism.

While it acts as a powerful food-replacing agent, it does not destroy, except temporarily, the natural appetite, and its use is said not to be followed by languor or depression.

It will be found of great service as a recuperative agent in convalescence from various wasting diseases.

This Wine is prepared from Coca leaves of the best quality and in such a manner as will most effectually secure the full effect of the Coca plant.

The quantity of alkaloid found in Coca Leaves varies considerably; therefore the use of a uniform quantity of leaves to a given product produces varying results. To obviate this, and to secure a **UNIFORM ALKALOIDAL STRENGTH**, all the leaves used in our Wine of Coca are assayed and the quantity used in each case is determined by the assay.

In prescribing this preparation, therefore, the physician may be assured of uniform action.

DOSE:—From one to two tablespoonfuls, to be taken after meals. For children a proportionate quantity.

Put up in 16 oz. bottles. For sale by all druggists.

W. H. Schieffelin & Co.,

NEW YORK.

SUBLIMATE SOAP.

($\frac{1}{2}$ % Hydrarg. Chlor. Corrosiv.)

Prepared by J. D. STIEFEL,
Offenbach-on-the-Main, Germany.

This Soap is prepared in accordance with the suggestions of Prof. Bergmann, M.D., of Berlin, and is highly recommended by physicians, including those in the army, for the treatment of Scabies, *Pediculi Capitis et Pubis*, etc. The excellent results obtained from its use have led to its adoption in many German hospitals. One piece has been found more than sufficient to cure a person of Scabies, and it is prescribed in preference to Bals. Peru, Styrax, Sapo Viridis, Unguent. Hydrarg., etc.

It is very carefully and conscientiously prepared, and the proportion of Bichloride of Mercury is guaranteed to be one-half of one per centum in each cake.

Simply washing with it, as with any toilet soap, effectually destroys all parasites of the body, leaving no injurious effects whatever.

BIRCH TAR AND SULPHUR SOAP (J. D. Stiefel).

(10% Pix liquida and 10% Sulfur depur. lot.)

Tar as well as Sulphur were used in ancient times for various skin diseases, and their therapeutic application is still in great vogue. The excellent effects attained by the use of this Soap are principally due to the use of pure Birch Tar, combined with Sulphur in proportions recommended by the best dermatologists. It is made under the charge of an experienced chemist, and should not be confounded with such soap as is commonly manufactured of Coal Tar without the aid of any pharmaceutical knowledge. As the best Birch Tar is used, the disagreeable odor of common Coal Tar, with its admixtures is avoided.

This Soap will cure the following diseases: cutaneous eruptions, herpes, chilblains, redness of the skin, dandruff, freckles, prickly heat, grubs, pimples, etc. It will produce a white skin and a fresh and healthy complexion. The disinfectant properties of this Birch Tar and Sulphur Soap cannot be over-estimated in contagious diseases.

BORACIC ACID SOAP (J. D. Stiefel).

(5% Acid Boracic, pur.)

Late exhaustive experiments with Boracic Acid have proved its very great utility in securing a healthy condition of the epidermis, especially in efflorescence, rash, red spots, scales, dandruff, salt-rheum and serpiginous excrescences, and the use of this soap cannot, owing to its excellent effects, be too highly commended.

The Boracic Acid contained in this Soap will act in the most expeditious and efficacious manner upon the diseased condition of the skin, as it combines with the fat of the excretions, and removes them, thus producing a clear and healthy complexion.

It produces a splendid smooth lather, and being very effectual in removing dandruff, has no equal for shampoo. It will be found a pleasant cleanser of the scalp, leaving the hair loose and smooth, thus giving it an attractive appearance.

ICHTHYOL SOAP (J. D. Stiefel).

(5% Natr. Sulfo-Ichthyolic.)

The substance used in this Soap is obtained from a bituminous mineral recently discovered in the Tyrol, and has already been extensively used in the treatment of skin diseases. Its value is principally due to the large proportion of Sulphur and Oxygen contained in it and its harmlessness.

The healing properties of this preparation are utilized in the most practical and pleasant manner in combination with this reliably prepared Soap.

Ichthyol Soap is especially useful in the treatment of eczema, erysipelas, salt-rheum, ringworm, skin-worms, scab, red spots and in all stages of rosacea, and will produce a fresh and healthy complexion. The unpleasant affliction of a red nose and all gradations of the redness of the skin can be favorably treated with this Soap.

Please send for our pamphlet containing notes explanatory of the various soaps prepared by this manufacturer.

For sale by all druggists.

W. H. Schieffelin & Co., NEW YORK,

Sole Agents.

WARBURG'S TINCTURE

AS PREPARED BY

W. H. Schieffelin & Co., New York.

We beg to call attention to this article as prepared by us for several years past, and which has attained a large sale.

There is so much testimony as to its extraordinary virtues in Malarial Fevers, that its powers can scarcely be questioned. At first a proprietary medicine, its formula was afterwards revealed by a voluntary act of its inventor, Dr. CARL WARBURG, late of Vienna but now of London.

Our WARBURG'S TINCTURE is prepared in accordance with the original formula, except that Confection of Theriac Ph. G. is substituted for Confection Damocratis—an unofficinal and impracticable preparation, some ingredients of which are nowhere obtainable.

Put up in 1 lb., ½ lb., ¼ lb., and 1 ounce bottles.

We also prepare

Warburg's Tincture (WITHOUT ALOES).

Pil. Warburg's Tincture—

(representing one drachm each), Bottles of 100 Pills.

	"	one-half	"	"	"	100	"
Capsules,	"	one	"	"	Boxes of	1 doz.	Capsules.
"	"	"	"	"	"	100	"
"	"	two	"	"	"	1 doz.	"
"	"	"	"	"	"	100	"

(The above with or without Aloes).

WARBURG'S TINCTURE

IMPROVED.

This Improved Warburg's Tincture is prepared to meet a demand for a substitute lower in price than the original Tincture.

It is made in exact accordance with our Warburg's Tincture, with the exception that instead of Sulphate of Quinine, 9½ grains, each fluid ounce contains

Cinchonia Sulphate,	3½ grains.
Cinchonidia Sulphate,	3½ "
Chinoidine, Purified,	3½ "
		9½ grains.

DOSE: Same as our Warburg's Tincture.

Put up in 1 lb., ½ lb., ¼ lb., and 1 ounce bottles.

Please be particular to specify "Schieffelin's."

For sale by all druggists.

W. H. Schieffelin & Co.,
NEW YORK.

W. H. Schieffelin & Co.
SOLUBLE PILLS AND GRANULES

NEW YORK, JANUARY, 1887.

AS HAS BEEN OUR CUSTOM ANNUALLY OR SEMI-ANNUALLY FOR SEVERAL YEARS, WE ARE AGAIN PLEASED TO ENCLOSE TO OUR MEDICAL FRIENDS A COPY OF OUR BOOK CONTAINING A COMPLETE LIST OF THE FORMULÆ OF OUR SOLUBLE PILLS AND GRANULES, WITH NOTES CONCERNING SAME, AND OTHER MATTER OF INTEREST TO PHYSICIANS GENERALLY. WE ENCLOSE ALSO OUR FORMULA CARD, CONTAINING A SELECTED LIST OF SAME, COMPRISING THE MORE POPULAR FORMULÆ OF THE GENERAL LIST, FOR POCKET USE AND HANDY REFERENCE.

TO THE GREATER PORTION OF THE MEDICAL PROFESSION OF THIS COUNTRY THE BOOK HAS BECOME FAMILIAR IN THE COURSE OF ITS PERIODICAL DISTRIBUTION, AND THE ATTENTION OF SUCH IS RESPECTFULLY CALLED TO THE CONTENTS OF THIS CIRCULAR, IN WHICH IS PRESENTED THE LATER ADDITIONS TO OUR LIST.

THOSE OF THE PROFESSION WHO NOW RECEIVE OUR FORMULA BOOK FOR THE FIRST TIME, WILL, WE BELIEVE, FIND IT OF INTEREST AS A WHOLE, AND WE WOULD RESPECTFULLY BESPEAK FOR IT A CAREFUL PERUSAL.

IN OUR CIRCULAR OF JUNE, 1886, WE REFERRED TO THE INCREASING ANNOYANCE TO PHYSICIANS CAUSED BY THE VISITS AND SOLICITATIONS OF AGENTS IN THE INTERESTS OF VARIOUS SPECIALTIES, AND TO OUR DISPOSITION TO RELIEVE THE PROFESSION OF THIS BURDEN TO SOME EXTENT BY ADDRESSING THEM IN MAILED CIRCULARS, WHICH MIGHT BE READ AT THEIR CONVENIENCE. THE COURTESY WITH WHICH OUR CIRCULAR WAS RECEIVED, AND THE KIND INTEREST EXPRESSED IN ITS CONTENTS LEAD US TO THE CONCLUSION THAT THE METHOD FOUND FAVOR, AND WE SUBMIT THE PRESENT ISSUE, TRUSTING IT MAY MEET THE SAME KIND CONSIDERATION.

VERY TRULY,

W. H. Schieffelin & Co.

W. H. Schieffelin & Co.'s

SOLUBLE PILLS AND GRANULES.

Attention is respectfully called to the following latest additions to our list:

Pil. Aloin, Strychniæ et Belladonnæ Comp.

{ Aloin.....	7-5 gr. }
{ Strychniæ.....	1-60 gr. }
{ Ext. Belladonnæ.....	½ gr. }
{ Ext. Cascariæ Sagradæ.....	½ gr. }

This pill is recommended in chronic constipation. The Aloin for its laxative effect, the Strychnia to relieve spasm of the intestines, the Belladonna because of its paralyzing influence upon the inhibitory intestinal nerves, and the Ext. Cascara Sagrada, obtained from the "Rhamnus Purshiana," in cases of habitual constipation, with hemorrhoidal tendency, has proved extremely useful, producing a mild action of the bowels without any griping effect. (*Vide* article by Dr. PROSSER JAMES in *Medical Press*, London, April 25, 1883.)

Dose: 1 pill.

Pil. Aperient Improved.

{ Aloin.....	½ gr. }
{ Irisin.....	½ gr. }
{ Podophyllin.....	½ gr. }
{ Ex. Belladonnæ.....	½ gr. }
{ Ex. Nuc. Vomiciæ.....	½ gr. }
{ Ol. Capsici.....	1-16 gr. }

In this pill, the Podophyllin and Irisin are intended to increase the biliary secretion, the Nux Vomica to counteract intestinal spasmodic action, the Aloin and Irisin for purgative effect, the Capsicum as a carminative adjuvant, the whole forming an excellent corrective for constipation, either from torpidity of the liver or spasmodic stricture of the lower intestines.

Dose: 1 pill.

Ferruginous (Blaud's), 1st Form.

{ Ferri Sulph.....	1½ grs. }
{ Potass. Carb.....	1½ grs. }

Dose: 2 to 5 pills.

Ferruginous (Blaud's), 2d Form.

{ Ferri Sulph.....	2½ grs. }
{ Potass. Carb.....	2½ grs. }

Dose: 1 to 3 pills.

These pills are admirably adapted for the assimilation of iron, as the ingredients react upon each other to form Protoxide of Iron, which, owing to the protection afforded by the soluble coating, remains unaltered until freed for action by the stomach juices.

These formulæ of excellent tonic effect, and familiar for many years to the physicians of this country, are presented here because we believe they are destined to a very much more extensive use in the line of tonics than they have yet attained. In Great Britain they lead all our other tonic pills, and we can commend them to general attention as most excellent for that purpose.

Pil. Manganese Bin-Oxide. 1 gr. 2 grs.

Emmenagogue and menstrual regulator.

Dose: 1 to 2 grs.

Pil. Quiniae Ferri et Zinci Valerianat.

{ Quiniae Valerianat. 1 gr. }
{ Ferri Valerianat. 1 gr. }
{ Zinci Valerianat. 1 gr. }

Highly recommended for melancholia, and the fretfulness and worry of nervous women. We have succeeded in interesting the Medical Profession throughout our country in this formula to such an extent as to create a demand which we found it difficult to supply; but we now beg to advise the trade that we are in a position to furnish Pills of this formula in any quantity wanted.

They are very popular both with the patient and physician.

“EDITOR MEDICAL BRIEF, St. Louis, Mo.:

“The family doctor only knows how wide-spread Melancholia is in our country. The many household cares develop this disease in nervous women, who show its first symptoms in fretfulness and worry. I have sought for a remedy for years for this malady and have at last found it in the triple valerianates, which works like a charm :

{ Zinci Valerianat. 20 gr. }
{ Quiniae Valerianat. 20 gr. }
{ Ferri Valerianat. 20 gr. }

[M. ft. pil. No. 20. Sig: One, three times a day.]

‘The drugs must be absolutely pure. The old reliable house of W. H. Schieffelin & Co., of New York, have added the above pills (soluble) to their list, and I have tried them in many cases and I find them a specific for the worry of nervous women, melancholia and incipient insanity.

“Please try them and report. Your success will be sure.”

S. A. DE FOE, M.D.,
Washington, N. J.

Pil. Tonic Laxative (Skene).

{ Quiniae Sulph. 1 gr. }
{ Ext. Belladonnæ. 1-10 gr. }
{ Ext. Colocynth Comp. ½ gr. }

Recommended highly as a remedy for obstinate constipation, and as particularly adapted to cases of broken down constitution, by Alexander J. C. Skene, M.D., Brooklyn.

After a few days' treatment with this combination, the bowels are brought to a normal healthy condition, and continue to perform their proper functions naturally.

DOSE: 1 pill, three times a day, until free action is obtained: after which, 1 or 2 pills a day, as may seem advisable.

Warburg's Tincture.

[Representing one drachm each.]

DOSE: 1 pill.

There is so much testimony as to the extraordinary virtues of Warburg's Tincture in Malarial Fevers, that its powers can scarcely be questioned. At first a proprietary medicine, its formula was afterwards revealed by a voluntary act of its inventor, Dr. CARL WARBURG, late of Vienna, but now of London, U. S. D., 1883.

Ours is prepared in accordance with the original formula except that Confection of Theriac Ph. G. is substituted for Confection Damocratis—an unofficinal and impracticable preparation, some ingredients of which are nowhere obtainable.

The pill form is the most eligible for its administration as it may be so taken without offense to the palate.

Warburg's Tincture.

[Representing one-half drachm each.]

DOSE: 1 or 2 pills.

W. H. Schieffelin & Co.,

170 & 172 William Street, New York.

WORDS OF CAUTION IN THE USE OF

CATHARTIC PILLS.

THE INCREASING TENDENCY OF MANY DRUGGISTS TO USE A CHEAP GRADE OF CATHARTIC PILLS WITHOUT SPECIAL REGARD TO THE FORMULA OR TO THE QUALITY OF THE INGREDIENTS, LEADS US TO RESPECTFULLY CALL YOUR ATTENTION TO THE

PIL. CATHARTIC COMP., U. S. P., 1870,

which we manufacture. We beg to say that the different purgative constituents of the U. S. P. pill were very carefully considered by the eminent originators of the formula. It is intended to combine smallness of bulk with efficiency and comparative mildness of purgative action, and a peculiar tendency to the biliary organs.

The object of smallness of bulk is accomplished by the use of extracts and the more energetic cathartics; that of a peculiar tendency to the liver by the use of calomel; and that of efficiency with mildness of operation by the union of several powerful purgatives.

It is a fact abundantly proved by experience, that drastic cathartics become milder by combination without losing any of their purgative power.

Cathartic medicines act on different parts of the alimentary canal and organs secreting into it. In small doses both the irritation which they occasion and their purgative effect are proportionally lessened. If several are administered at the same time, each in a diminished dose, it is obvious that the combined purgative effect of all will be experienced, while the irritation, being feeble in each part affected and diffused over a larger space, will be less sensible to the patient and will more readily subside.

In the Compound Cathartic Pills most of the active purgatives in common use are associated together in proportions corresponding with their respective doses, so that an excess of any one ingredient is guarded against, and violent irritation from this cause prevented.

It is plain, therefore, that the omission of any ingredient on the score of expense, or the substitution of inactive ingredients, will destroy the harmonious action of all.

Pills sold at low prices in the bulk, with no guarantee that the proper amount, if any, of Resin of Scammony is present, will not produce the therapeutic action intended.

It is highly important that the best quality of Comp. Ext. Colocynth and other ingredients be used in making Comp. Cathartic Pills. Comp. Ext. Colocynth (so called) may be bought in market at prices below the first cost of the raw material for its preparation. We believe that in such cases one of the most important ingredients (Resin of Scammony), being very expensive, is either omitted altogether or represented by ordinary Scammony as a substitute, or the quantity used is graded to the price at which the finished extract is to be sold.

All the extracts used in our pills are manufactured in our own laboratory, and are warranted to be, not only in strict conformity with the officinal requirements, but also of carefully selected materials.

Such of the above remarks as pertain to Comp. Ext. Colocynth, apply also to our pills of Extract Colocynth Co. U. S. P., and the combinations into which it enters.

By prescribing "Schieffelin's" Comp. Cathartic Pills, U. S. P. 1870, the full and proper effect may be surely obtained.

W. H. Schieffelin & Co.,

NEW YORK.